Safety & Health Managers Meeting
Cocoa Beach, Florida,
March 1-5, 2004

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AGENDA

- Accessibility
- Seismic Safety
- POP-04 Construction of Facilities

Accessibility

Authority:

•Architectural Barriers Act (Public Law 90-480) of 1968, as amended (42 U.S.C. 4151-4157)

•Section 504 (29 U.S.C. 794a) (Public Law 93-112) of 1973, as amended.

• Americans With Disabilities Act (ADA) of 1990, 42 U.S.C. Section 12111, et seq. and 42 U.S.C. Sections 12201-204 and 12210.

Accessibility Survey by Center

- **Goal** - Ensure that all NASA facilities are accessible and in compliance with the Rehabilitation Act of 1973, as amended and Section 504

- Assessed Center's remaining architectural and facility barriers, and reviewed their plan to bring their facilities into ADA compliance by:
  - Identifing Center wide accessible needs by facility
  - Reviewed a multi-year implementation plan for FY 2003 through FY 2007, and out-years, to eliminate the identified facility barriers.
  - Projects are listed in priority order, including building name or facility number, comments (specify affected areas) and costs.
- Estimated cost in FY 03 dollars is $71M
- Total number of facilities = 4290,
  - Number requiring accessibility = 1,340,
  - Number complying with Access Standards = 418,
  - Number not complying = 924 – 34(hardship) = 890
  - Number considered a Hardship = 34

Accessibility - Summary

- Data Call response:
  - Approximately 890 NASA facilities are non-compliant
  - Estimated Funding Requirements: $71M
- Accessibility given high scores in prioritization process: Assuming funds are obtained per recently developed center schedule scenarios (including repair-by-replacement plans), approximately 80% of the currently identified requirement may be completed by the end of FY2011.
- Joint Code E/Code O policy letter in development
- Considering incorporating accessibility policy into "NASA Facilities Project Implementation Guide," NPD 8820.2 when that document is rewritten.

Seismic Safety

- **<u>Congress passed</u>:**
  - **Earthquake Hazards Reduction Act of 1977 (P.L. 95-124) and,**
  - **National Earthquake Hazards Reduction Program (NEHRP) was created in June 1978.**
- **<u>New Facilities</u> –**
  - **Executive Order 12699** - Assure all new facilities meet current National Earthquake Hazard Reduction Program (NEHRP) standards
- **<u>Existing Buildings</u> –**
  - **Executive Order 12941**: Seismic Safety of Existing Federally Owned or Leased Buildings

- NASA will Evaluate/Upgrade Buildings to Current Seismic Codes & Standards When:
  - –1) A Building Represents an "Exceptionally High Risk",
  - –2) A Building Is Revitalized to Meet Other Building Codes and Standards,
  - –3) A Building's Functional Use is Changed,
  - –4) A Building Is Added to Its Inventory.

Seismic Safety

- Seismic Inventory of building completed.

- JPL, ARC, DFRC and Goldstone previously identified building that will be upgraded based upon the above criteria. Each Center has that information.

- Recently, JPL completed a Center wide study of its structures. It identified new work to upgrade structures to new National Earthquake Hazard Reduction Program (NHERP) standards.

- Historically JPL, Dryden, and Ames have upgraded structures when other components of a facility are upgraded.

- Goldstone has upgraded facilities to current seismic standards as a stand alone effort.

Seismic Safety

•**Evaluations** — The following is a listing of the handbooks/standards used for seismic evaluations by the Program:

- •**FEMA 178,** NEHRP Handbook for the Seismic Evaluation of Existing Buildings.
- •**FEMA 310,** NEHRP Handbook for Seismic Evaluation of Buildings

Rehabilitation - The following is a listing of rehabilitation guidelines used for seismic improvements to buildings by the NEHRP Program:

- •**FEMA 273/274** (Provisions/Commentary) NEHRP Guidelines for the Seismic Rehabilitation of Buildings, dated October 1997.
- •**FEMA 356** Prestandard and Commentary for the Seismic Rehabilitation of Buildings, dated November 2000.

• **ICSSC RP 4** (NISTIR 5382) - Standards of Seismic Safety for Existing Federally Owned or Leased Buildings and Commentary

• **ICSSC RP 5** (NISTIR 5734) - Guidance on Implementing Executive Order 12941 on Seismic Safety of Existing Federally Owned or Leased Buildings

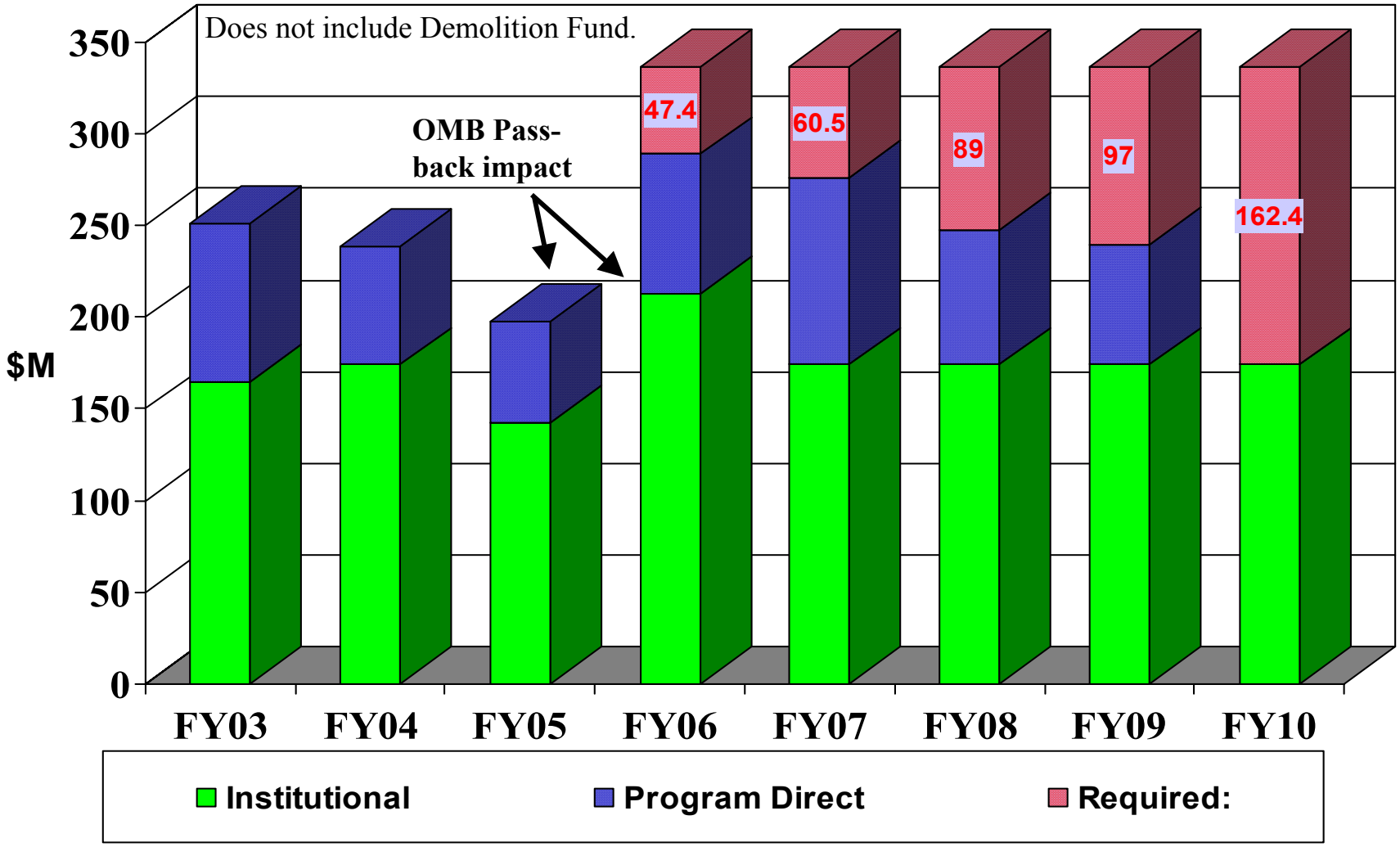
POP-04 Construction of Facilities

- What One Tool Tells Us

A Tool Used in CoF Prioritization

- Facility Condition Index (FCI):
  - NASA Average FCI: 3.6
  - Target - NASA's average FCI to 4.3, based on independent engineering evaluation
  - Cost to reach target FCI: $1.6B
    - **$320M** per year over a 5 year budget run-out.
- Facility Revitalization Rate:
  - For a 67 years: $285M/year
  - For a 50 years: $382M/year
- Facility Sustainment Model: $310M/year (day-day maintenance and repair)

CoF 5-Year Budget Run-Out



$320M/year based on FCI + FP&D. Required amounts dependent on program direct amounts (shown for FY06-FY09 based on FY05 budget run-out).

NASA Facility Program (Future)

	Content	$$ Source	Center Role	HQ Role
Sustainment	Facility maintenance (planned, predictive, reactive), and facility repair under $5M.	Center, charged to Programs through G&A. Possible use of WCF.	Plan, budget, execute facility maintenance program	Provide policy, oversight, assessment of budgets, and functional assessment.
Revitalization/ Modernization (R/M)	Major ($5M and over) facility repairs, renovations, rehabilitations, modernization (upgrade to new codes, responses to new requirements, new technologies), including repair by replacement	Corporate program investment (institution and program direct). Possible WCF in the future.	Plan, execute R/M projects.	Provide policy and oversight, and functional assessment. Fund projects through corporate line. Prioritize and approve projects.
New Construction	Major projects (>$5M) that provide new brick & mortar, change the function or capacity of an existing facility.	Corporate program investment (institution and program direct). Possible WCF in the future.	Plan, execute new construction projects. Seek alternatives to new construction.	Provide policy and oversight. Prioritize institutional. Programs: identify requirements and funding, seek alternatives.

A Word on Repair by Replacement

- Repair-by-Replacement (or Repair-by-Renovation) (RPR) is the right way to go for older facilities. Advantages:
  - Lower life-cycle costs.
    - Sustainability improvements, especially energy conservation.
    - Design for maintainability.
    - Increased facility life, decrease facility age!
  - Addresses Accessibility issues.
  - Addresses Healthy Building issues.
  - Addresses Code issues…meet new codes.
  - Brings facilities up to current technologies.
  - Better facilities = improved productivity.
  - Can generally replace same function with less SF.
- But…is more expensive up front.
- We need to fund good projects!

FY2006: Prioritization Process

- What we did: Prioritization of CoF projects over $500K, concentrated on FY06 and FY07.
- Issues:
  - Primary issue: Large Repair-by-Replacement projects submitted by Centers in accordance with Code OJX policy takes a significant bite out of a limited pot of institutional CoF funding.
    - Developed two lists: one consolidated with all projects, one with the large construction projects listed separately.
  - Process was good, with a lot of hard work…results were somewhat controversial (expected).
  - Other considerations:
    - OMB FY 05 Passback results (two projects, $39M deferred one year).
    - New space exploration direction for NASA.

CoF Prioritization Process

- POP 04 Budget Guidance Issued (10/9/03)
- Center Submissions Received at HQ (1/05/04)
- HQ Prioritization Team Reviewed & Issued Preliminary Marks on Algorithm (1/05-1/27/04)
- Center CoF Presentations at HQ (2/2-2/6/04)
- HQ Prioritization Team Reviewed Additional Information Submitted and Issued Revised Marks (2/9-2/13/04)
- Centers Submitted Written Reclamas (2/18/04)
- HQ Prioritization Team Reviewed Reclamas, Active CRV, FCI, Corporate Issues (2/18-2/23)
- Facilities Review Board (2/27)

CoF Prioritization Team

- Code OJX Design and Construction Team
  - Harriet Ross
  - Calvin Williams
  - Howard Kass
  - Steve Rider
  - Scott Robinson
  - Wei Hu
  - Steve Smith
- Enterprises
  - Bob Soltess, M
  - Ron Dilustro, R
  - Roy Maizel, S
  - Rosemary Wager, U
  - Penny Harrigan, Y

- HQ Functional Codes
  - Cathy Angotti, AM
  - Wing Chan, AM
  - Fred Dalton, E
  - Steve Kapurch, OAE
  - Art Lee, Q
  - Clint Herbert, X

CoF Prioritization Factors

- **Center Priority***
- **IPO/Enterprise Priority***
- **Mission Essential**
- **Economic Analysis (Payback)**
- **Safety**
- **Health**
- **Accessibility**
- **Master Plan/PDRI score**
- **Security**
- **Environmental Issue**
- **Sustainable Design**
- **Repair Backlog Reduction**
- **Demolition**
- **Facility Condition Index**
- **Historic: Preserving America**
- **JX Assessment**

*Received highest weight

CoF Prioritization Factors

- **Enterprise Priority (40 Percent)**
- **40 Points** Critical to Enterprise Success – Project failure will lead to failure of major enterprise mission. Delays to project will directly impact mission schedule.
- **30 Points** Mission Critical – Project is essential to support enterprise mission. Failure to execute project will lead to increased cost/ reduced effectiveness or schedule impact of major enterprise mission.
- **20 Points** Supports Enterprise Operations – Project supports ongoing or future enterprise operations. Failure to execute the project may affect cost or effectiveness of enterprise operations.
- **10 Points** Enhance Enterprise Operations – Project will enhance enterprise operations but does not provide critical support to any particular mission.

CoF Prioritization Factors

- **Center Priority (30 Percent)**
- **30 Points** 1st Priority Project
- **29 Points** 2nd Priority Project
- **28 Points** 3rd Priority Project
- **27 Points** 4th Priority Project, etc.
- **5 Points** Minimum Score of any Center Recommended Project

CoF Prioritization Factors

- **Headquarters Facility Assessment (30 Percent):**

- **Corporate Priorities**

- **5 Points** Project is necessary to prevent major damage to Government property or resources, or project furthers NASA's corporate objectives. Project is a follow-on phase to previous year's project and must be completed.

- **4 Points** Project supports necessary licensing, regulatory, accreditation, or code requirements.

- **3 Points** Project is necessary to provide or upgrade infrastructure support to mission critical facilities, or project improves reliability of mission critical infrastructure and utilities.

- **2 Points** Project supports improved installation operations.

CoF Prioritization Factors

- **Headquarters Facility Assessment (30 Percent):**

- **Requirements Document**
- **1 Point** Yes – Requirements Document Complete
- **0 Points** No Requirements Document

- **Economic Analysis (Econopak) for FY 06/ *FY 07 (information only)***
- **1 Point** **Yes –** Econopak Analyses Completed and Payback
- **0 Points** No – Economic Analyses not Completed

- **PDRI Score**
- **1 Point** Yes - PDRI Score
- **0 Points** No - PDRI Score

- **Consistent with Master Plan Score**
- **1 Point** Yes – Consistent with Master Plan
- **0 Points** No – Consistent with Master Plan

CoF Prioritization Factors

- **Headquarters Facility Assessment (30 Percent):**

- **Improves Center Safety** (RACs of 1-4) If Project has Safety Risk Assessment Code of 1, it is corrected immediately; therefore, would not be in the CoF process

- **4 Points** Project is Safety Risk Assessment Code (RAC) of 2
- **3 Points** Project is Safety Risk Assessment Code (RAC) of 3
- **2 Points** Project is Safety Risk Assessment Code (RAC) of 4

- **Mission Essential Security Upgrade (On Code X list)**

- **4 Points** Project provides mission essential security upgrade (Project must be on NASA HQ. Code X project list.)

CoF Prioritization Factors

- **Headquarters Facility Assessment (30 Percent):**

- **Improves Center Health (RACs of 1-7)** If Project is Health Risk Assessment Code of 1, it is corrected immediately; therefore, would not be in the CoF process

- **4 Points** Project is Health Assessment Code (RAC) of 2
- **3 Points** Project is Health Risk Assessment Code (RAC) of 3
- **2 Points** Project is Health Risk Assessment Code (RAC) of 4
- **1 Point** Project is Health Risk Assessment Code (RAC) of 5-7
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- **ADA Compliance Score**

- **1 Point** Yes – Project to bring into code compliance.
- **0 Points** No – Project does not impact ADA

CoF Prioritization Factors

- **Headquarters Facility Assessment (30 Percent):**

- **Sustainable Design**

- 1/2 Point Project will minimize energy consumption.
- 1/2 Point Project will optimize site potential.
- 1/2 Point Project will conserve and protect water.
- 1/2 Point Project will use environmentally preferable products.
- 1/2 Point Project will enhance indoor air quality.
- 1/2 Point Project will optimize operational and maintenance practices.

- **Corrects Environmental Problem**
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- 1 Point Project corrects an environmental compliance problem or removes environmental hazards.
- 0 Points Project does not correct an environmental compliance problem or removes environmental hazards.

CoF Prioritization Factors

- **Headquarters Facility Assessment (30 Percent):**

- **Project Reduces Deferred Maintenance**
- **2 Point** Demolition - Facility will reduce total footprint by replacing underutilized facilities with new efficient facilities
- **1 Point** Project will reduce deferred maintenance

- **Project Facility Condition Index (1-5)**
- 1 Point Facility Condition Index 3 or less
- ½ Point Facility Condition Index 4 or less
- 0 Points Facility Condition Index 5 (Excellent Condition)

- **Project Preserves America**
- 1 Point Project Preserves America (Preservation or Documented Historic Facility)
- 0 Points Project will not Preserve America

POP-04 Prioritization Work Sheet

Center	Project Name	FY	Center Priority	Repair Cost ($000)	Construction Cost ($000)	Institutional/ Program Direct? (I or P)	1509/1510? (Y or N)	Requirements Document (Y or N)	Economic Analysis / Payback (years)	PDRI Score	*PDRI Score Interval (123) (Information Only)*	Consistent with Master Plan (Y or N)	Safety (RAC # 2-4 if applicable)	Mission Essential Security Upgrade (Y or N)	Health RAC Code (enter # 2-7 if applicable)	Americans with Disabilities Act Compliance (Y or N)	Sustainable Design (Enter # 0-6)	Corrects Environmental Problem (Y or N)	Includes Demolition (Y or N)	Reduction in Deferred Maintenance (Y or N)	Facilities Condition Index (1-5)	*Backlog of Maintenance and Repair (BMAR) (* Enterprises R & M use, not scored)*	Historic - Preserving America	Center Comments - Brief Description *(If factors are not 100% of project, annotate percentage for factor claimed.)*	Enterprise Priority	JX	Total
WXYZ	Example Project 1	6	1	$5,600	$0	I	Y	Y	12	200	3	Y	3	Y	0	N	0	N	N	N	4		N	Repairs to electrical wiring making code compliant; design not started.			
WXYZ	Example Project 2	7	3	$0	$3,800	I	Y	Y	5	0	0	N	0	N	0	N	1	Y	Y	Y	3		N	Mechanical Equipment Upgrade to Correct Indoor Air Quality Issues			

Thank You

Questions?

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